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EXECUTIVE SUMMARY

Oracle Integration provides native connectivity to Oracle and non-Oracle Software as a Service (SaaS) and On-premises applications, such as Oracle ERP Cloud, Oracle Service Cloud, HCM Cloud, Salesforce.com, Workday, EBS, SAP, and NetSuite and so on. Oracle Integration adapters simplify connectivity by handling the underlying complexities of connecting to applications using industry-wide best practices. You only need to create a connection that provides minimal connectivity information for each system.

USECASE BACKGROUND

BIP Extract – Designed for extracting data. Example scenarios

- Get the list of invoices that has been approved since last execution
- Extract payment data since last execution to update downstream or upstream applications to reflect payments.
- The data file can be larger than 10MB and Oracle Integration supports handling large files as an attachment (instead of base64 encoding). We always recommend csv format to reduce the size of the file (that XML generates). The report could be delivered to UCM or SFTP or it can triggered using ERP integration service (exportBulkData). Please [refer](#) blog on handling files from various interfaces and size constraints

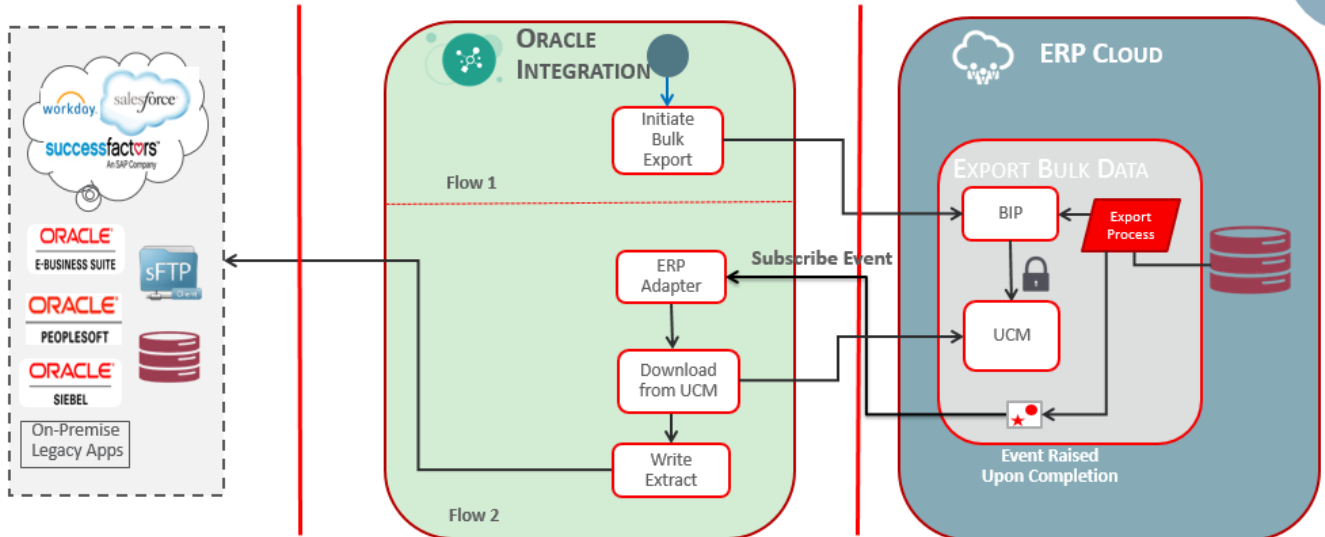
This use case explores the use of Oracle Integration to Bulk Extract data from Oracle ERP Cloud.

- Flow 1- Bulk Data Extract - Initiate a Payables Transactions Extract
- Flow 2- Create a callback flow to download the Payables Transactions extract and write to an FTP server

There are 2 options to achieve the Bulk Extract Callback Flow.

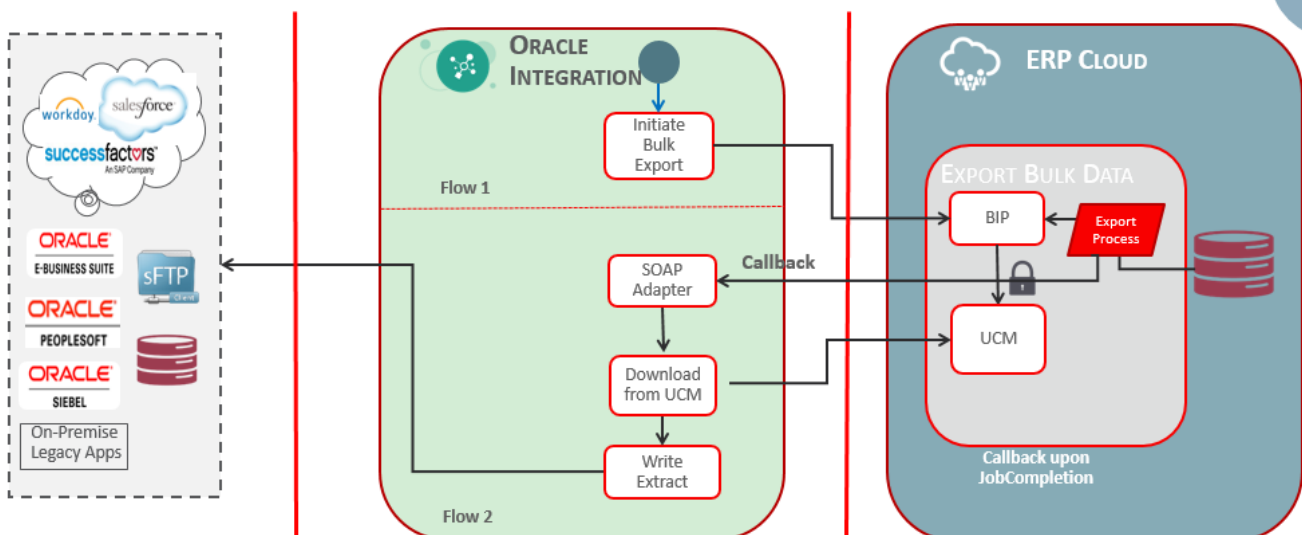
1. Creating an Event Flow using ERP adapter Outbound Event in trigger interface

Bulk Export and Callback Upon Job Completion pattern (Option1)



2. Creating a callback flow by providing abstract definition using SOAP adapter in trigger interface

Bulk Export and Callback Upon Job Completion pattern (Option2)



We will design Option 2 in the Lab

OBJECTIVE

This document walks you through the steps needed to replicate this use case in your environment

BUILDING THE ERP CLOUD BULK EXTRACT USE CASE

This section works through the steps that are required to build the integration from scratch.

Prerequisites

You will need access to the following applications and artifacts:

- Oracle Integration (OIC)
- ERP Cloud R12+
- FTP Server

Creating Connections (Flow1)

The following Connections have been created and configured. You will be using these connections for creating Integration flows

Connection Name	Connection Type
ERP Conn 96 06	ERP Adapter

Creating the Bulk Extract Integration (Flow1)


1. On the Oracle Integration home page, click **Integrations**.
2. On the Integrations page, click **Create**. The Create Integration - Select a Style/Pattern dialog is displayed.
3. Select **Scheduled Orchestration** type of integration. The **Create New** Integration dialog is displayed.
4. Enter the following information:

Field Element	Value
What do you want to call your integration?	ERP Bulk Extract <ClassId> <StudentId> Ex: ERP Bulk Extract 96 06
Identifier	Accept the default identifier value. The identifier is the same as the integration name you provided, but in upper case.
Version	Accept the default version number of 01.00.0000. Alternatively, if you want to change the version number, enter the version using numbers only in this format: xx.xx.xxxx.
What does this integration do?	This integration initiates payables transactions extract in ERP cloud
Which package does this integration belong to?	Leave blank

Create Integration - Select a Style

How would you like to build your integration? Select a style to use.


App Driven Orchestration



Multi-step Integration flow triggered by an Application or API.

Select


Scheduled Orchestration



Multi-step Integration flow triggered by a Schedule. Commonly used for Batch/Bulk Integrations or File processing.

Select


File Transfer



Seamlessly and securely move files across the network.

Select


Basic Routing



Basic App to App Routing with Data Mapping.

Select


Publish To OIC



Publish messages from Apps to OIC Pub/Sub Channel.

Select

Subscribe To OIC



Subscribe to messages from OIC Pub/Sub Channel.

Select

Cancel

Create New Integration

Enter information that describes this integration.

Describe this integration Use a meaningful name and description that will help others find and understand this integration. The Identifier and Version can be set only when the integration is created. The combination of Identifier and Version must be unique.

*** What do you want to call your integration?**

ERP Bulk Extract 96 06

*** Identifier**

ERP_BULK_EXTRAC_96_06

*** Version**

01.00.0000

What does this integration do?

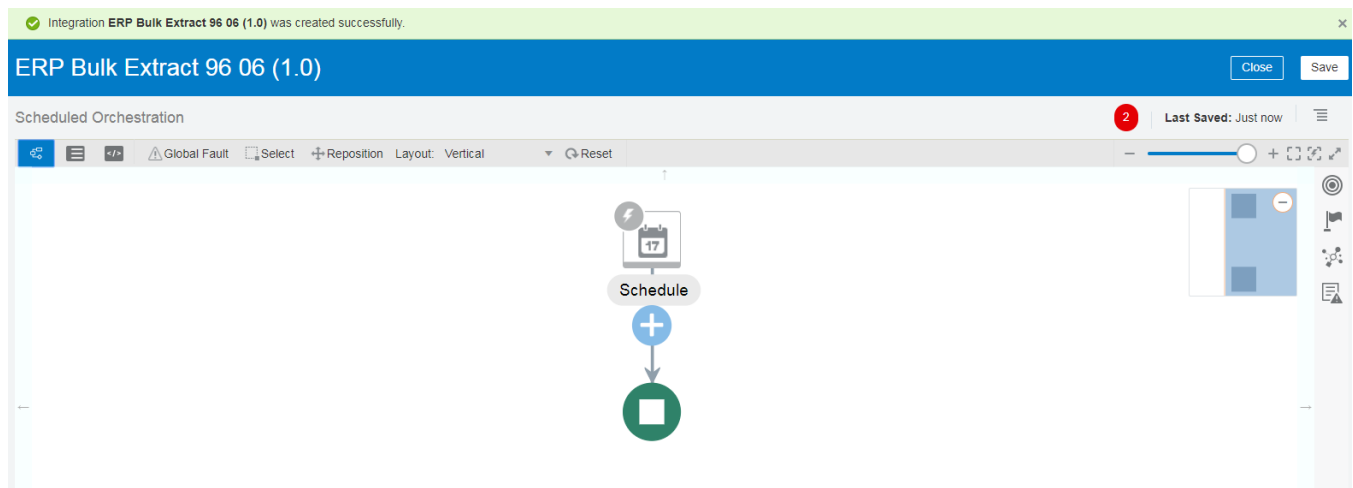
This integration initiated payables transactions extract in EPR cloud

Which package does this integration belong to?

Enter a new or existing package name

Create Cancel

5. Click **Create**. The integration canvas is displayed.



Integration ERP Bulk Extract 96 06 (1.0) was created successfully.

ERP Bulk Extract 96 06 (1.0)

Scheduled Orchestration

Global Fault Select Reposition Layout: Vertical Reset

2 Last Saved: Just now

Schedule

ERP

Invokes

- ERP Cloud (Oracle ER...)
- ERP Conn 96 06 (Oracle ER...)**
- ERPEDNHCON (Oracle ER...)
- OOW18_ERPCloud (Oracle ER...)

1. Hover over the wiring next to Schedule activity and click on “+” sign
2. Select the ERP Connection (ERP conn 96 06) from the list which is pre created for you
3. In the Basic Info page, enter the details as in the screenshot below to define the endpoint in the flow. Click Next

Configure Oracle ERP Cloud Endpoint

Help < Back Next > Cancel Done

Welcome to the Oracle ERP Cloud Endpoint Configuration Wizard

This wizard helps you configure an endpoint using the Oracle ERP Cloud connection. You will be asked to specify configuration parameters and define an operation for the service.

Basic Info

Actions

Operations

Response

Summary

* What do you want to call your endpoint?

initiateExtract


What does this endpoint do?

Endpoint to initiate payables transactions extract

4. In the Actions page, select the option “Query, Create, Update or Delete Information. Click Next

Configure Oracle ERP Cloud Endpoint

Help ▾ < Back Next > Cancel Done

 **Welcome to the Oracle ERP Cloud Endpoint Configuration Wizard**
This wizard helps you select one of the capabilities of Oracle ERP Cloud Adapter

Basic Info

Actions

Operations

Response

Summary


? What would you like to do with Oracle ERP Cloud Adapter?

- ☒ **Query, Create, Update or Delete Information**
Perform operations such as Find Catalog, Create Orders, Update Accounts, Process Expenses etc
- ☐ **Import Bulk Data into Oracle ERP Cloud**
Perform FBDI-compliant bulk operations such as Import Asset Leases, Journal Entries, Bank Statements, Payable Invoices, Project Tasks, Sales Orders, Shipping Transactions etc. You can also configure event notifications and callbacks on these operations.
- ☐ **Send Files to ERP Cloud**
Upload files to Universal Content Management (UCM) in ERP Cloud. Note that once the files are uploaded, you will need to add a separate action in your integration flow to invoke the appropriate scheduled process or API in ERP Cloud to process the file. Use this option only when you cannot use the Import Bulk Data option above which automatically takes care of all this.
[Learn more about these Actions](#)

5. In the Operations Page Brose by “Services”, Search for “ERPIntegration Service” and select “exportBulkData” operation. Click Next

Configure Oracle ERP Cloud Endpoint

Help ▾ < Back Next > Cancel Done

 **Configure the Operations to Perform in the Target Oracle ERP Application**
Select the business object or service and operation to use for the target integration.

Basic Info

Actions

Operations

Response

Summary

Browse by Services ▾

Select a Service

ERPIntegration All ▾

ErpIntegrationService

Select the Operation to Perform on the Business Object/Resource or Service

exportBulkData ▾

Lifecycle: Active

Description

6. Review information in the Summary Page and Click “Done” to complete the wizard.

Configure Oracle ERP Cloud Endpoint

Help < Back Next > Cancel Done

Oracle ERP Cloud Endpoint Configuration Summary
Oracle ERP Cloud endpoint configuration was successful.

Basic Info
Actions
Operations
Response
Summary

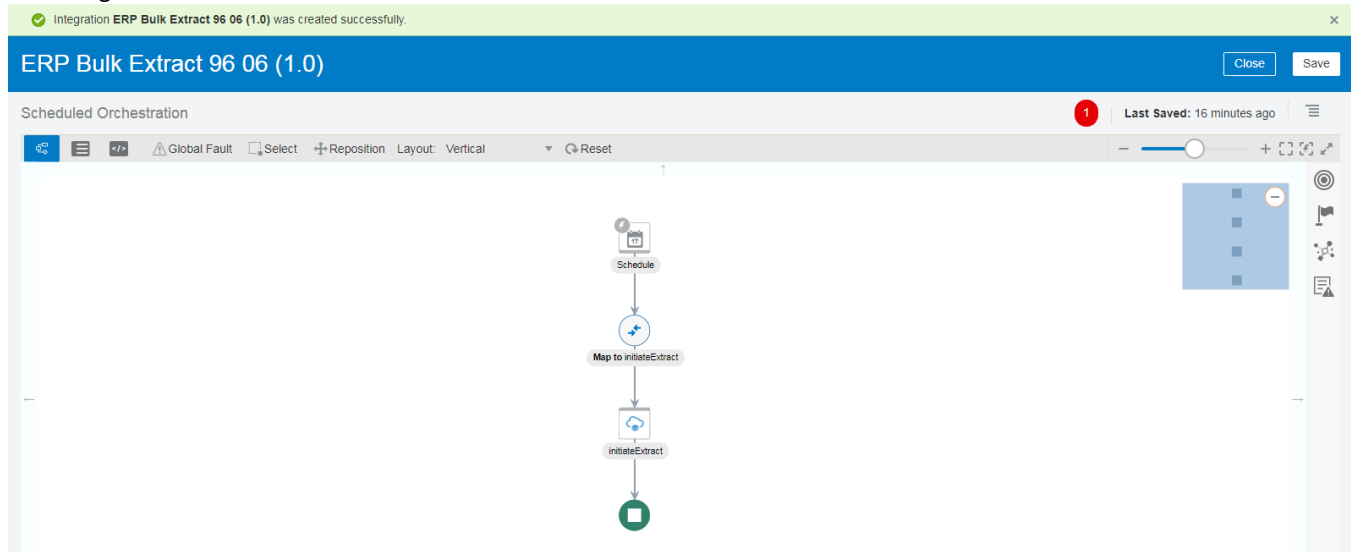
initiateExtract

Description
Endpoint to initiate payables transactions extract

Business Object ErpIntegrationService

Operation exportBulkData

7. Integration so far...



8. Edit the “Map to initiateExtract” activity and provide mapping for job name, parameter list, job options and notification code

Map the values as per the table below

Target Parameter under exportBulkData operation	Value
jobName	oracle/apps/ess/financials/commonModules/shared/common/outbound,FinOutboundProcess
parameterList	92,/oracle/apps/ess/financials/commonModules/shared/common/outbound;PayablesTransactionsExtract,BIPREP ORT,FULL_EXTRACT,#NULL,300000046987012,#NULL,#NULL,#NULL,#NULL,12- 18,N,N,300000046975971,#NULL,#NULL,#NULL,FULL_EXTRACT,#NULL,#NULL,#NULL,PayablesTransactionsExtract, #NULL
jobOptions	ExtractFileType=ALL
notificationCode	30

We will revisit the above mapping to add value for “callbackURL” parameter in the target once we design and activate the callback flow. For now, we will leave empty

Map to initiateExtract ERP Bulk Extract 96 06 (1.0) Close Validate

Map

Designer Code Test Recommend

Sources

- schedule*
- startTime*
- \$tracking_var_1
- \$tracking_var_2
- \$tracking_var_3

Mapping Canvas

Target

exportBulkData*

- jobName
- parameterList
- jobOptions
- callbackURL
- notificationCode
- ConnectivityProperties*

Expression for: jobName

"oracle/apps/ess/financials/commonModules/shared/common/outbound,FinOutboundProcess"

9. Validate and Close the mapper. Save the Integration

Click on the Hamburger icon on the Top right corner and provide Tracking information. Select “StartTime” Drag and drop” from the ‘Source’ pane into the “Tracking Field”. Save the Tracking Fields and Close the Integration flow

Business Identifiers For Tracking

View Filter Detach

Source Find...

- schedule
- startTime

Business identifiers enable runtime tracking on messages. Specify up to three tracking fields. A primary identifier is required. It enables you to track fields across integration flows and is always available.

Additional business identifier fields are optional. At runtime, they are available for tracking only when this integration flow is selected.

Primary	Tracking Field	Tracking Name	Tracking Variable	Help Text
✓	startTime	start Time	tracking_var_1	How to track it?
	Drag a trigger field here	tracking_var_2	tracking_var_2	How to track it?
	Drag a trigger field here	tracking_var_3	tracking_var_3	How to track it?

Save Cancel

DO NOT ACTIVATE THE INTEGRATION. WE WILL REVISIT THE ACTIVATION STEP AFTER CALLBACK FLOW IS IMPLEMENTED AND ACTIVATED

Creating Connections (Flow2)

The following Connections have been created and configured. You will be using these connections for creating Integration flows

Connection Name	Connection Type
ERP Conn 96 06	ERP Adapter
FTP Conn 96 06	FTP Adapter
SOAP ERP CBK Con 96 06	SOAP Adapter
ERP Integration SOAP Con 96 06	SOAP adapter

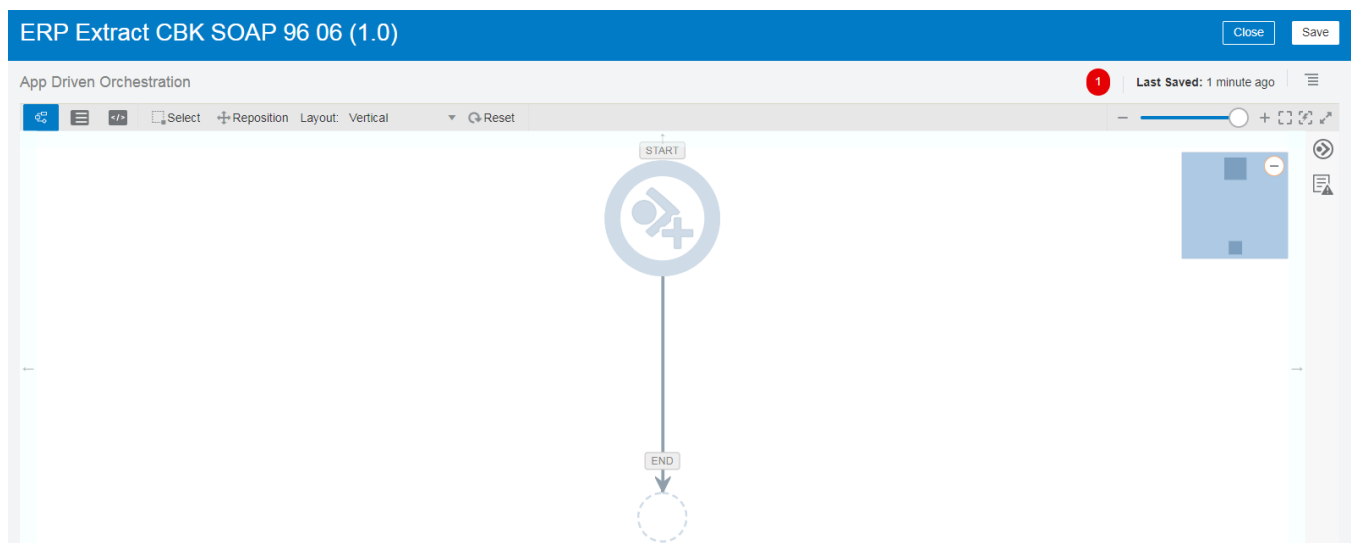
Note: Sample Callback wsdl definition is provided as part of the labs for your reference.

Creating the Bulk Extract Callback Integration (Flow2)

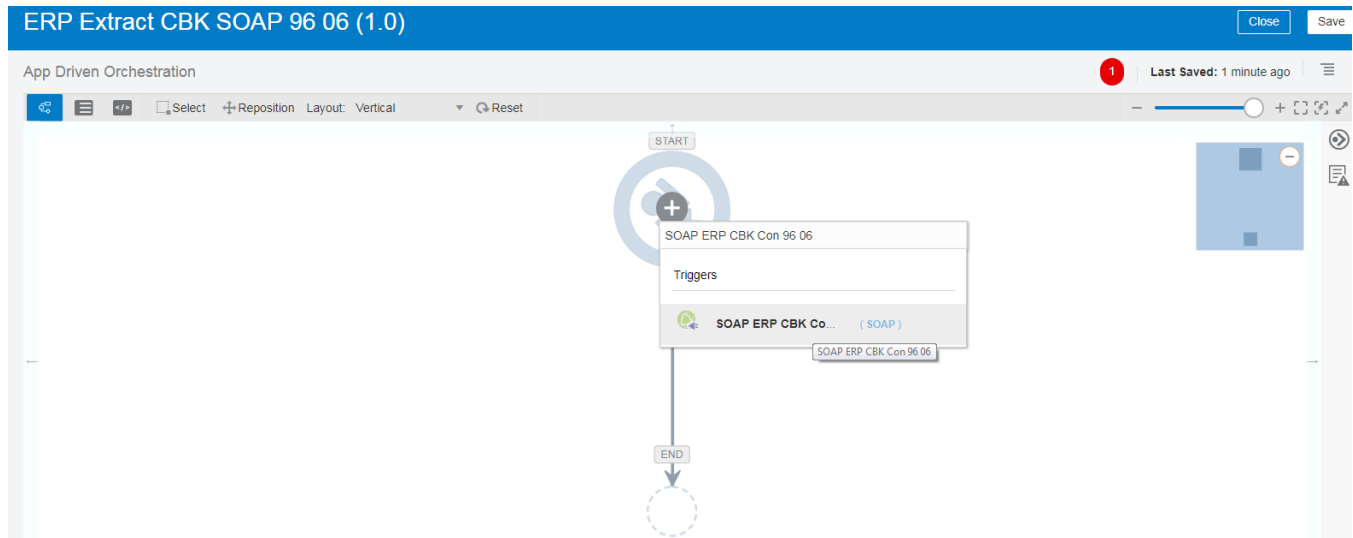
- On the Oracle Integration home page, click **Integrations**.
- On the Integrations page, click **Create**. The Create Integration - Select a Style/Pattern dialog is displayed.
- Select **App Driven Orchestration** type of integration. The **Create New** Integration dialog is displayed.
- Enter the following information:

Field Element	Value
What do you want to call your integration?	ERP Extract CBK SOAP <ClassId> <StudentId> Ex: ERP Extract CBK SOAP 96 06
Identifier	Accept the default identifier value. The identifier is the same as the integration name you provided, but in upper case.
Version	Accept the default version number of 01 . 00 . 0000. Alternatively, if you want to change the version number, enter the version using numbers only in this format: xx . xx . xxxx.
What does this integration do?	This integration demonstrates the use of Oracle Integration ERP Bulk Extract callback flow capability to receive callback and download the extract and then write to an ftp server
Which package does this integration belong to?	Leave blank

- Click **Create**. The integration canvas is displayed.



- Hover over the Circle next to Start activity and click on “+” Sign
- Select the SOAP ERP Connection (SOAP ERP CBK Con 96 06) from the list which is pre created



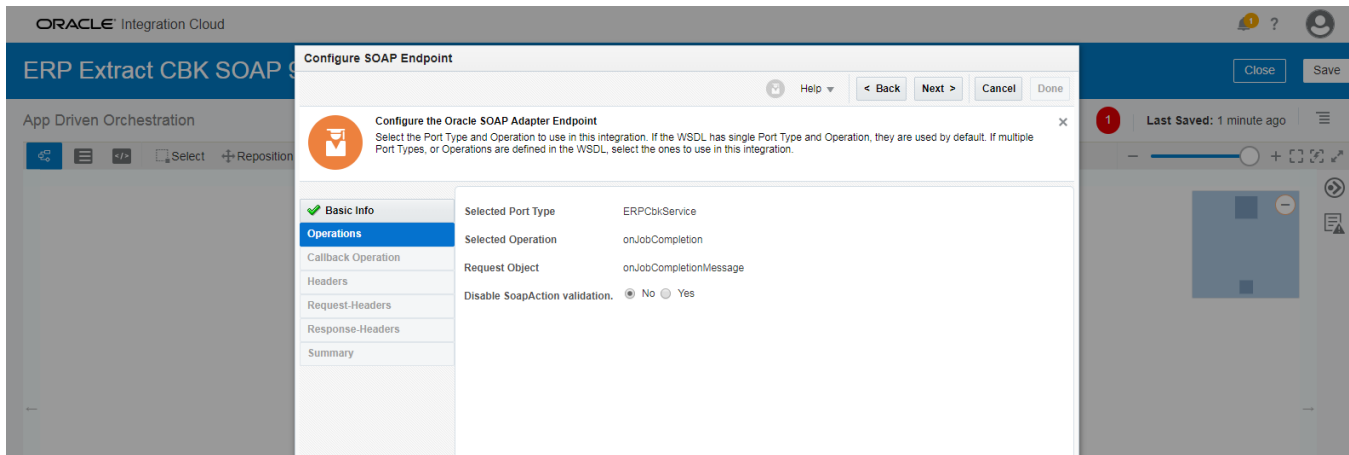
8. In the Basic Info page enter the details as in the screenshot below to define the endpoint in the flow. Click Next.

The screenshot shows the "Configure SOAP Endpoint" wizard in the Oracle Integration Cloud. The "Basic Info" tab is selected in the left sidebar. The main content area displays the following information:

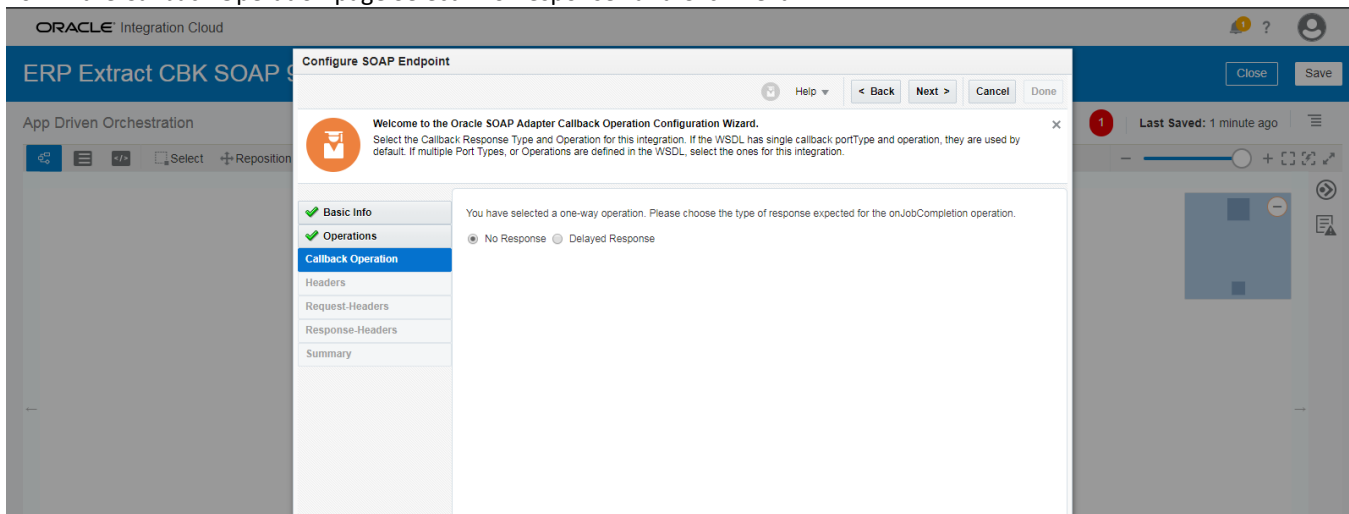
- Welcome to the Oracle SOAP Adapter Endpoint Configuration Wizard**
This wizard helps you create a service using the Oracle SOAP Adapter.
- * What do you want to call your endpoint?**
bulkExtractCallback
- What does this endpoint do?**
Describe the endpoint's purpose and detail

The right sidebar shows the "Last Saved: 1 minute ago" message and a "Close" button.

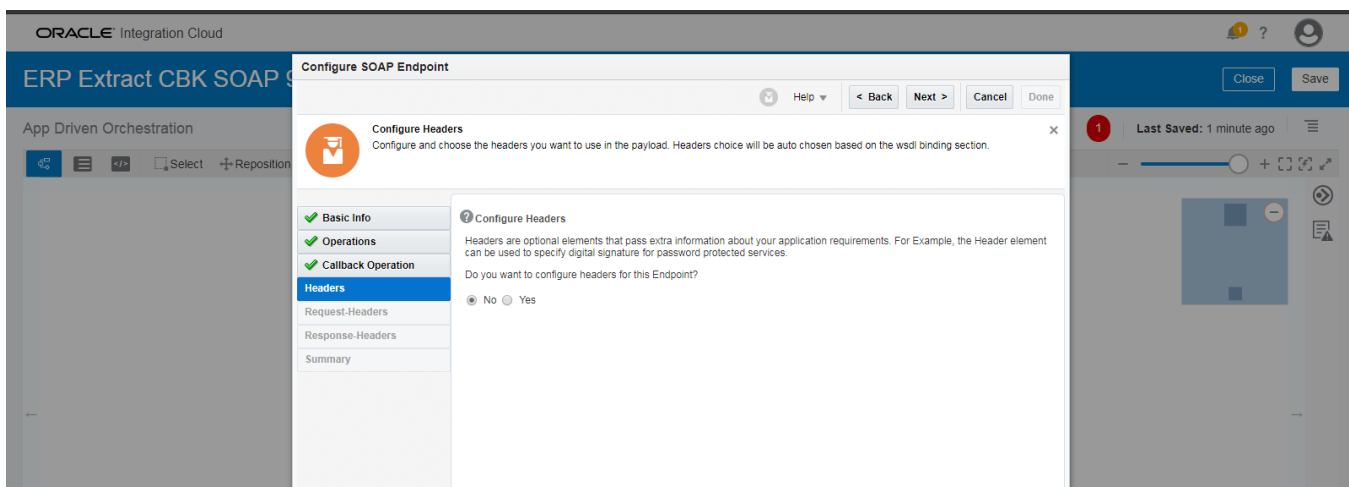
9. In the Operations page Select "Disable SOAP Action Validation" to "No" and leave the rest as defaults



10. In the Callback Operation page Select “No Response” and Click Next



11. In the Headers page Select “Configure Headers” as “No” and Click Next



12. In the Summary page review the information and click on Done.

Configure SOAP Endpoint

Help
 < Back
 Next >
 Cancel
 Done

Oracle SOAP Adapter Cloud Connection Artifacts Summary
 Oracle SOAP Adapter Cloud configuration was successful.

- Basic Info
- Operations
- Callback Operation
- Headers
- Request-Headers
- Response-Headers
- Summary**

WSDL URL erpcbkinterface-onjobcompletion.wsdl

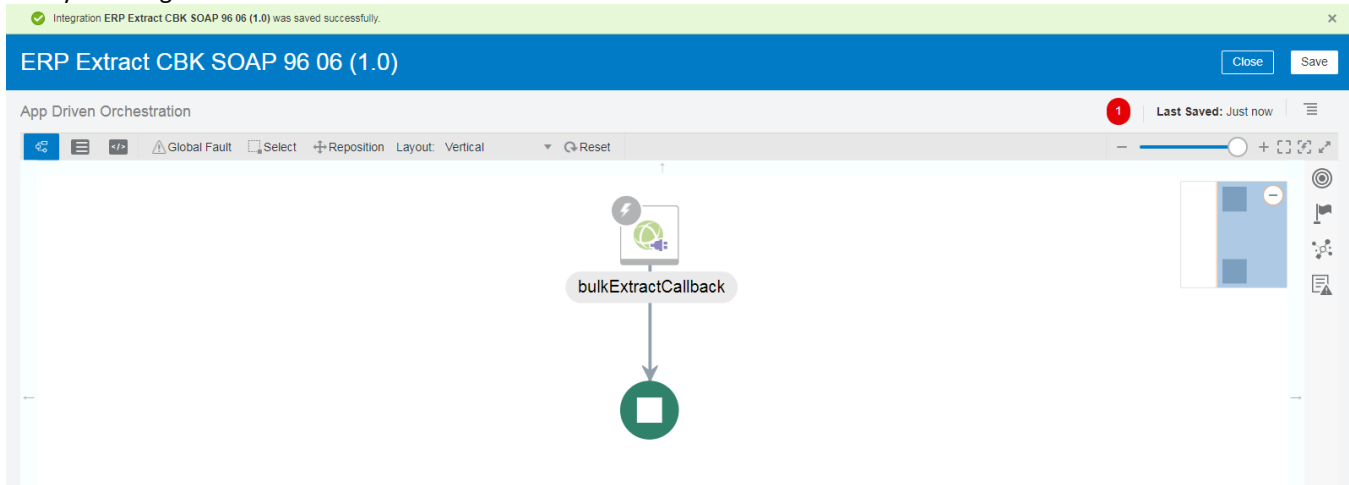
Selected Port Type ERPCbkService

Cloud Operation onJobCompletion

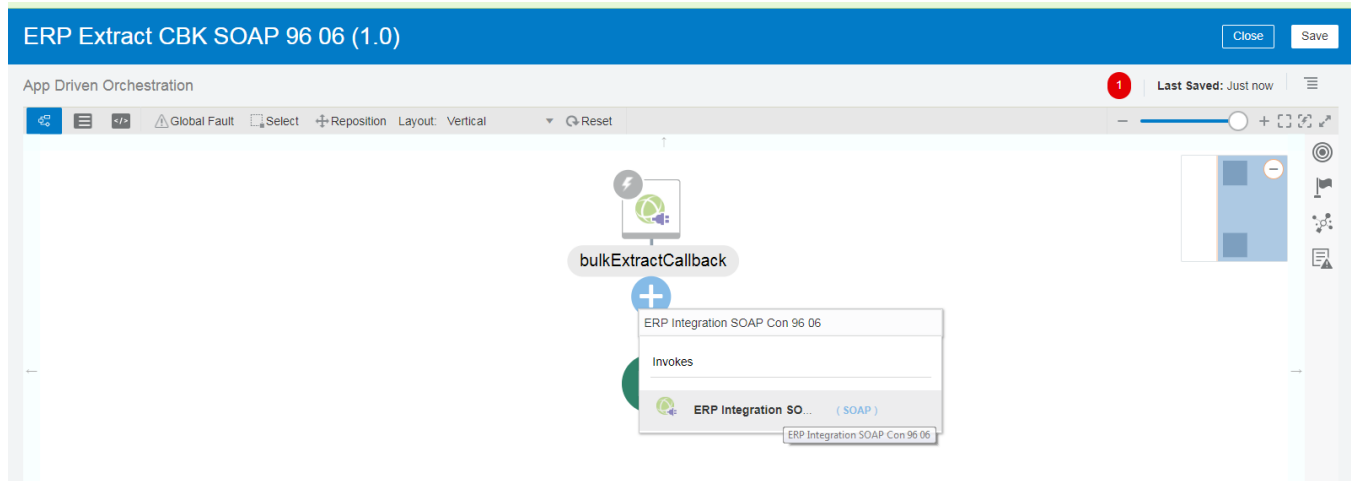
Message Exchange Pattern Oneway

Disable SoapAction validation. No

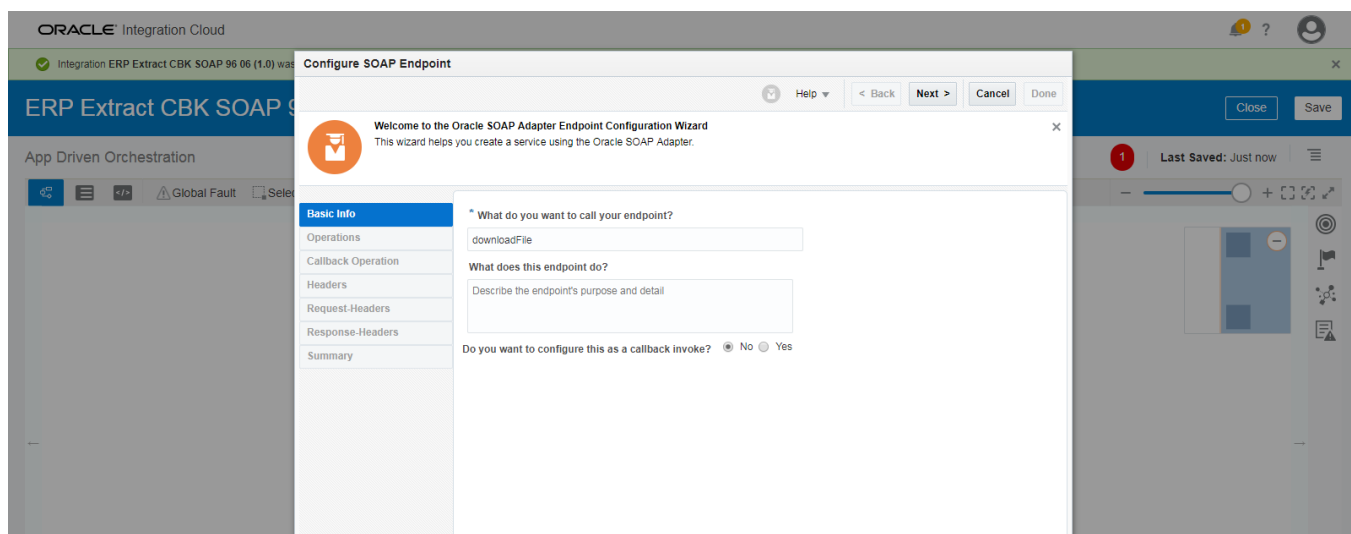
Save your integration



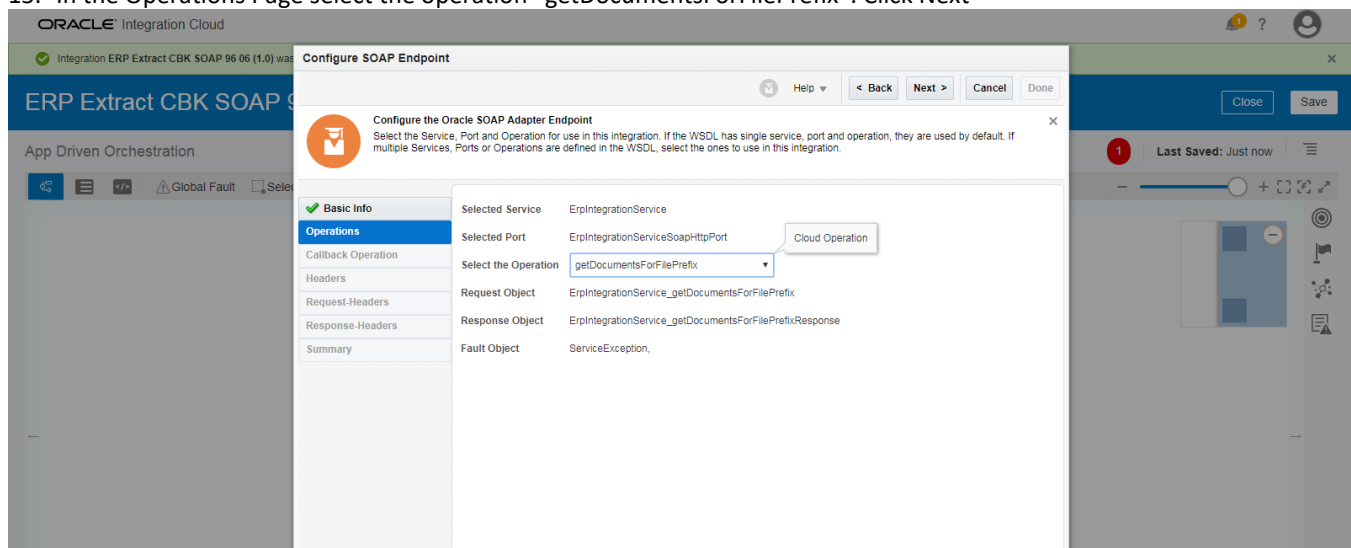
- Hover on the wiring next to “bulkExtractCallback” and click on “+” sign and Select the preconfigured Connection “ERP Integration SOAP Con 96 06”



14. In the Basic Info Page provide the endpoint name and Click Next

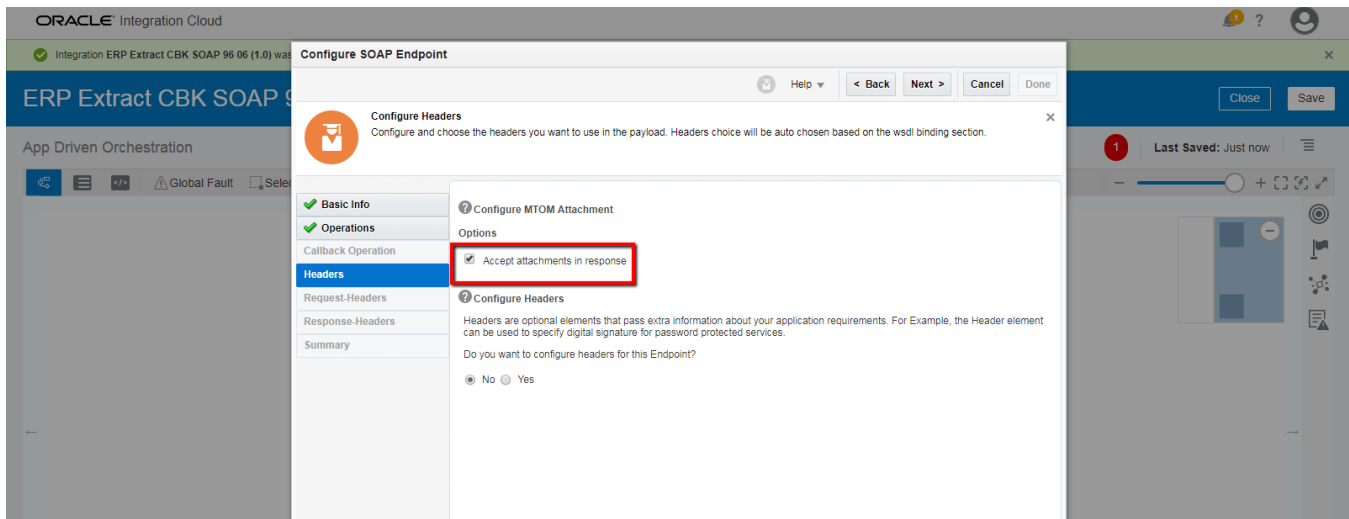


15. In the Operations Page select the operation "getDocumentsForFilePrefix". Click Next

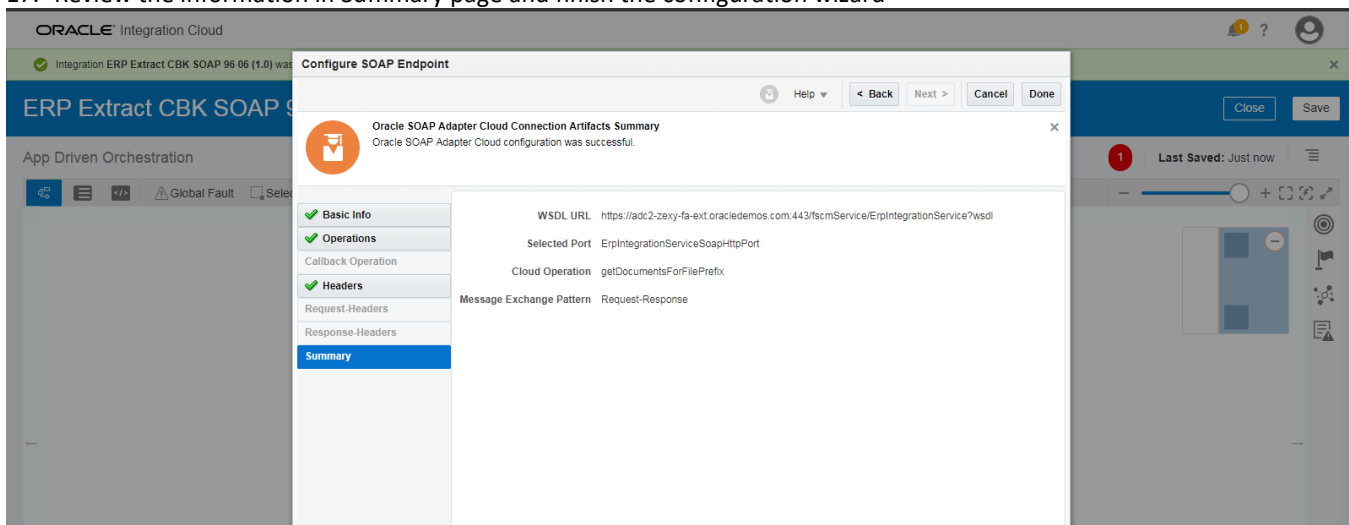


16. In the Headers page, select “Accept attachments in Response”. Click Next

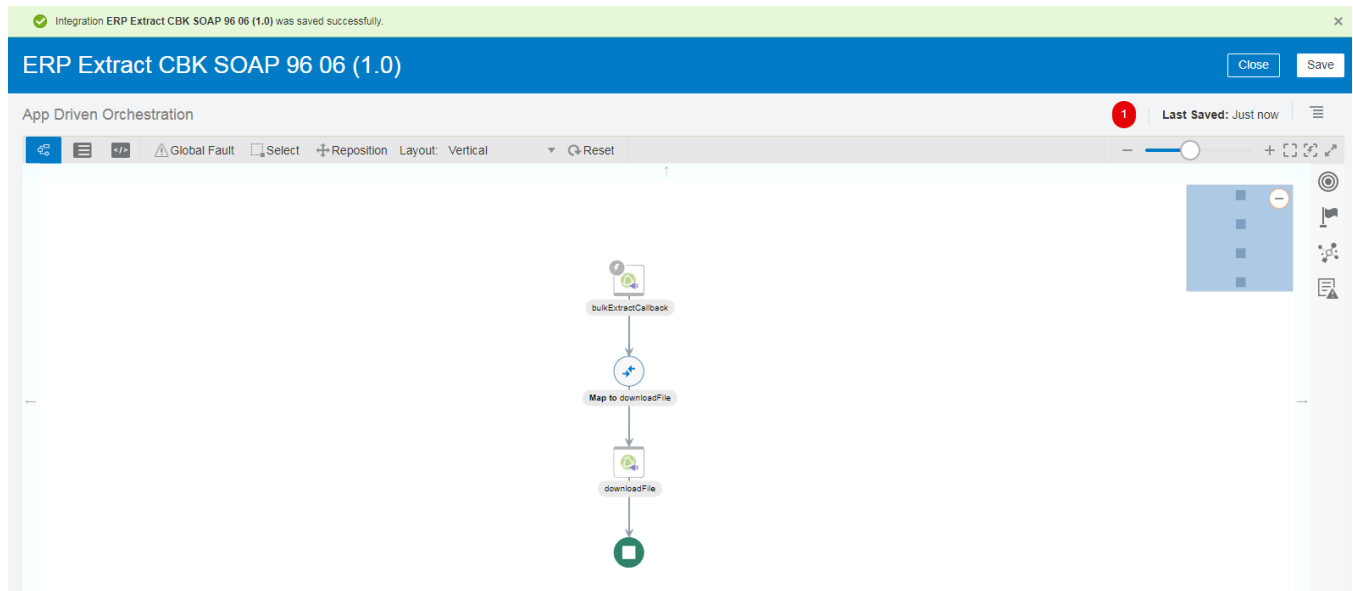
Note: SOAP adapter allows rich capability to accept content as attachment instead of base64-encoded data.



17. Review the information in Summary page and finish the configuration wizard

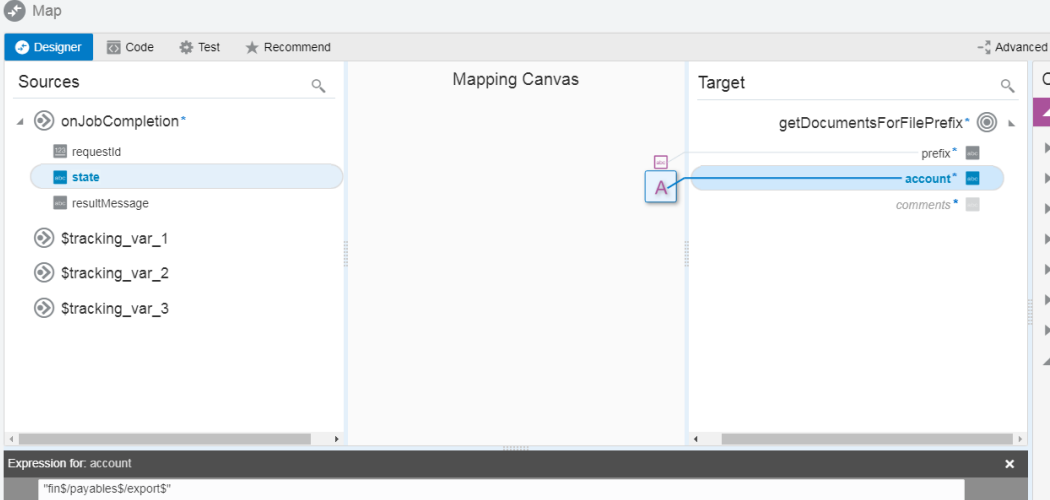
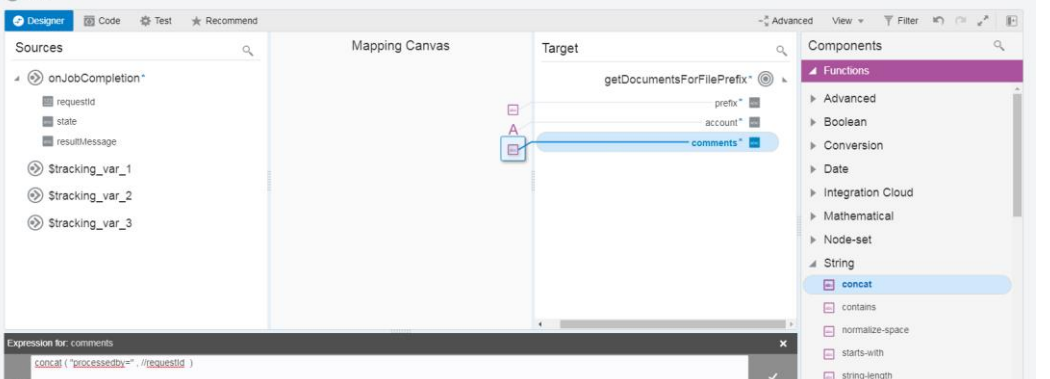


18. Integration so far..

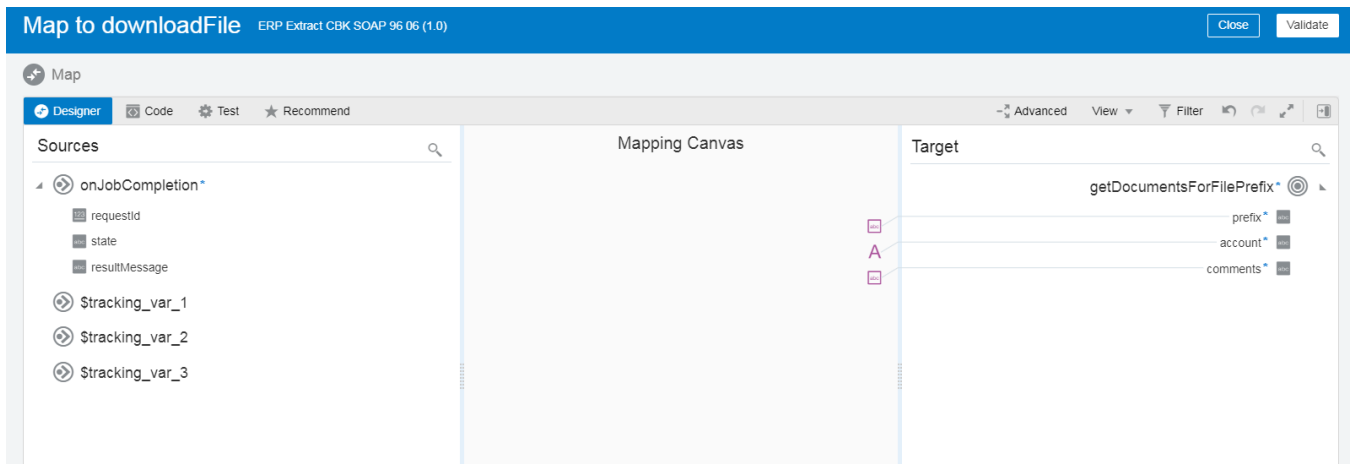


19. Edit the map activity (Map to downloadFile). Provide the values as per the table below

Element	Mapping
getDocumentsForFile Prefix->prefix	<p>Select the “prefix” element in the Target, drag and drop concat function the Component palette -> Functions -> String</p> <p>In the expression Window provide the function parameters as below Value 1: “ESS_” Value 2: //requestId Value 3: “_BIPReport0” Completed expression: concat ("ESS_", //requestId , "_BIPReport0")</p>

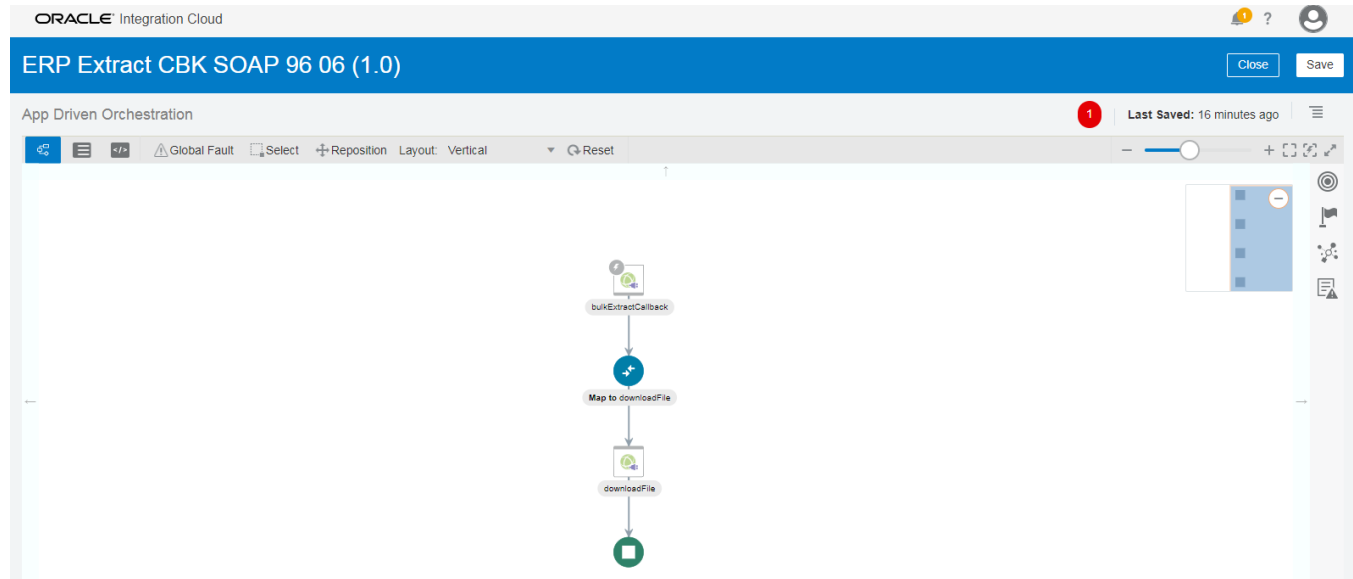
<p>getDocumentsForFile Prefix->account</p>	<p>“fin\$/payables\$/export\$”</p> <p>Map to downloadFile ERP Extract CBK SOAP 96 06 (1.0)</p> 
<p>getDocumentsForFile Prefix->comments</p>	<p>concat ("processedby=" , //requestId)</p> 

Final Mapping

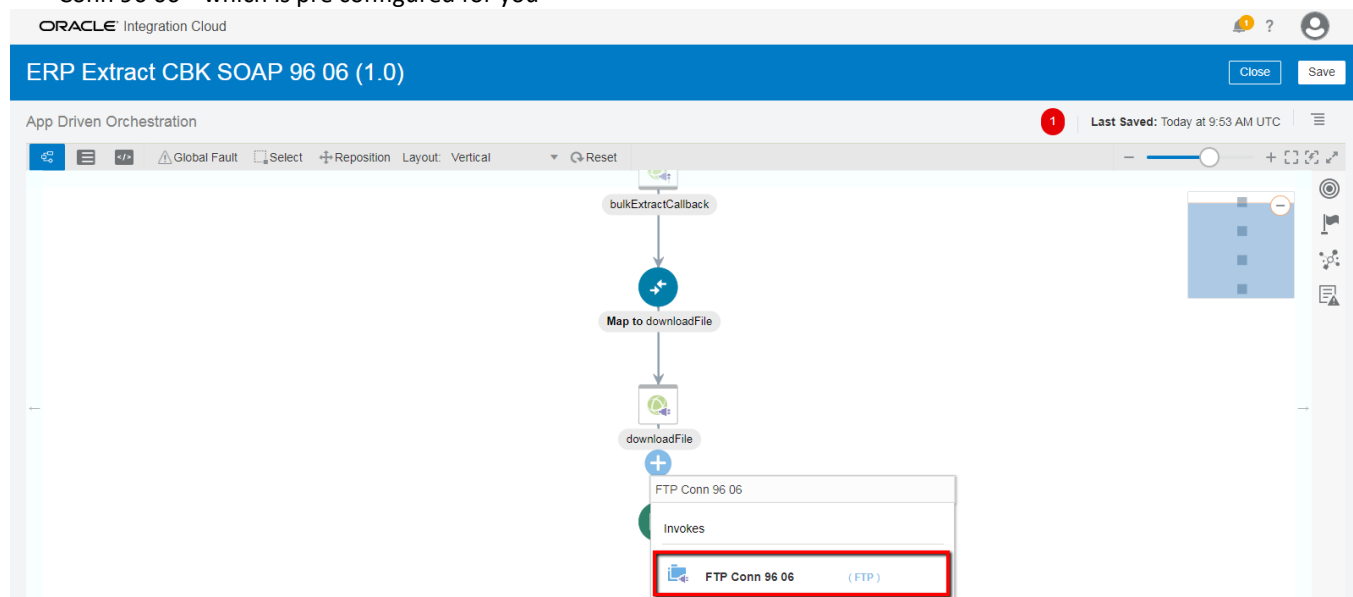


Click Validate and Close the mapper window

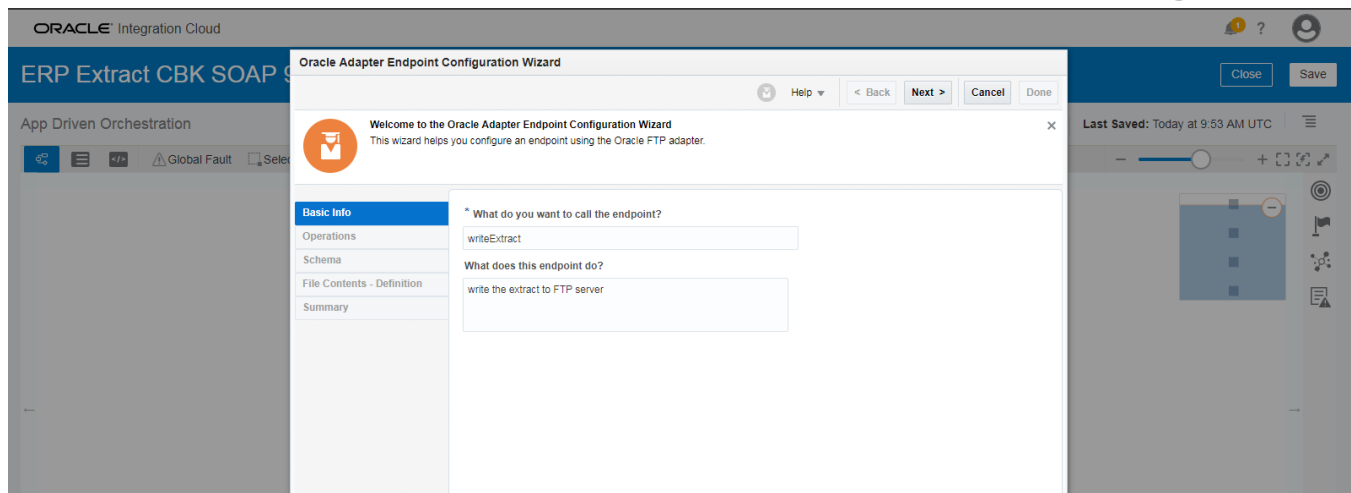
20. Integration flow so far...



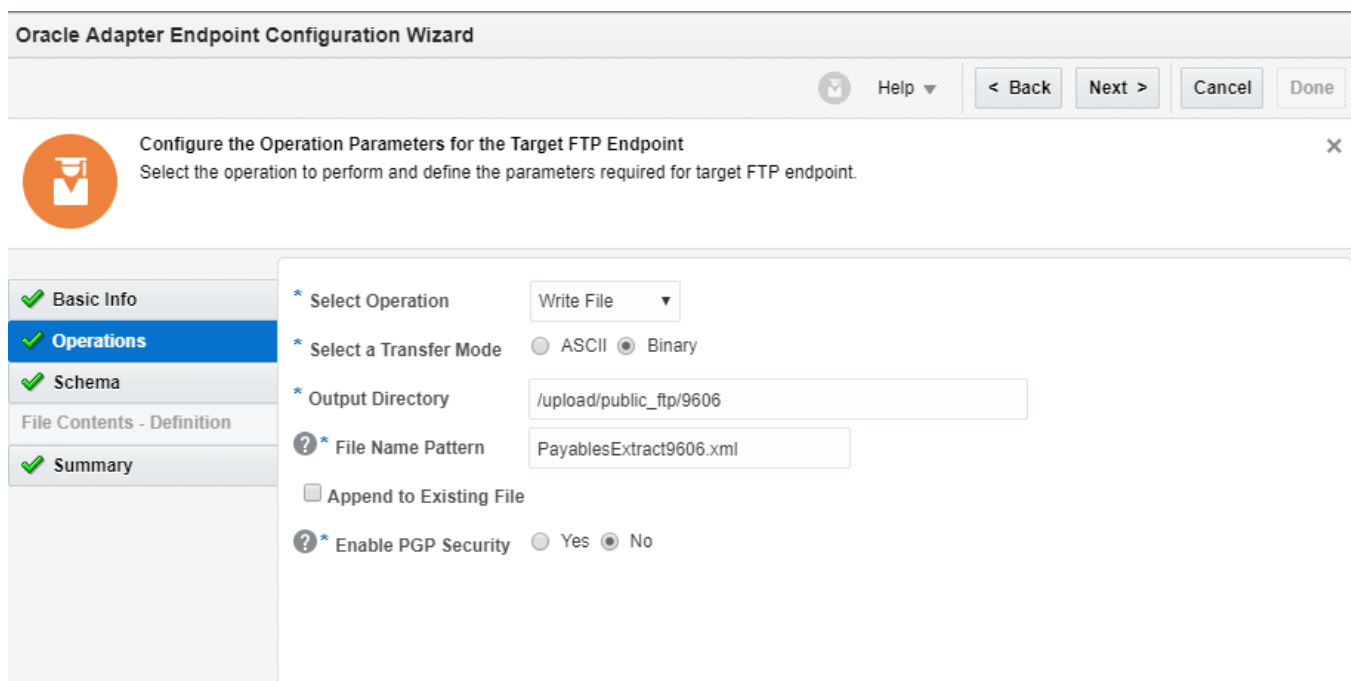
21. Hover on the wiring next to “downloadFile” activity and click on “+” Sign and Select the preconfigured Connection “FTP Conn 96 06 ” which is pre configured for you



22. In the Basic Info page enter the details as in the screenshot below to define the endpoint in the flow. Click Next

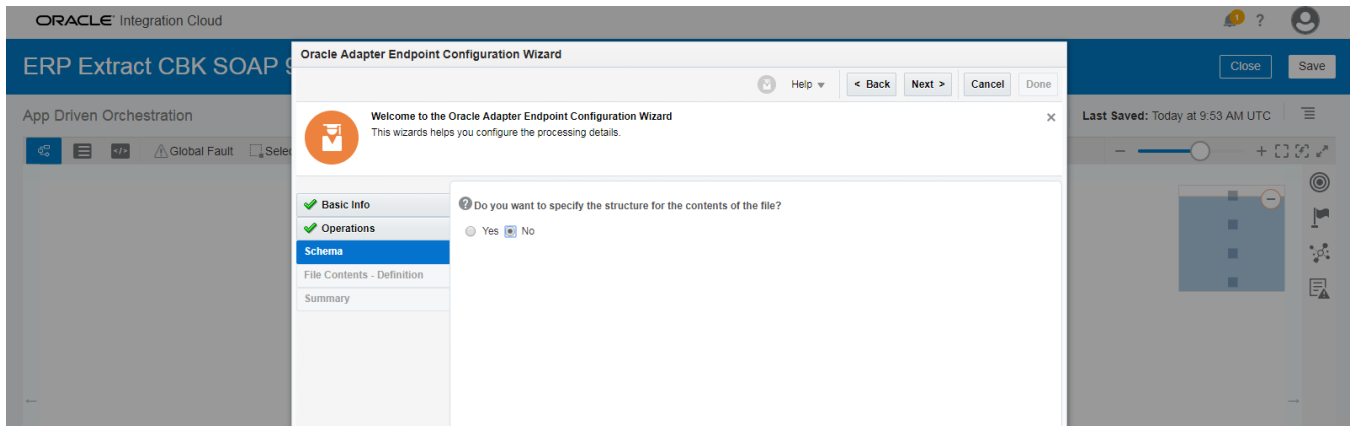


23. Note: replace 9606 with your <ClassId><StudentId> to the file name pattern and in output directory in the next step.
 24. In the FTP Adapter operations page provide the Operation, File Name(PayablesExtract9606.xml) and Output Directory (/upload/public_ftp/9606)

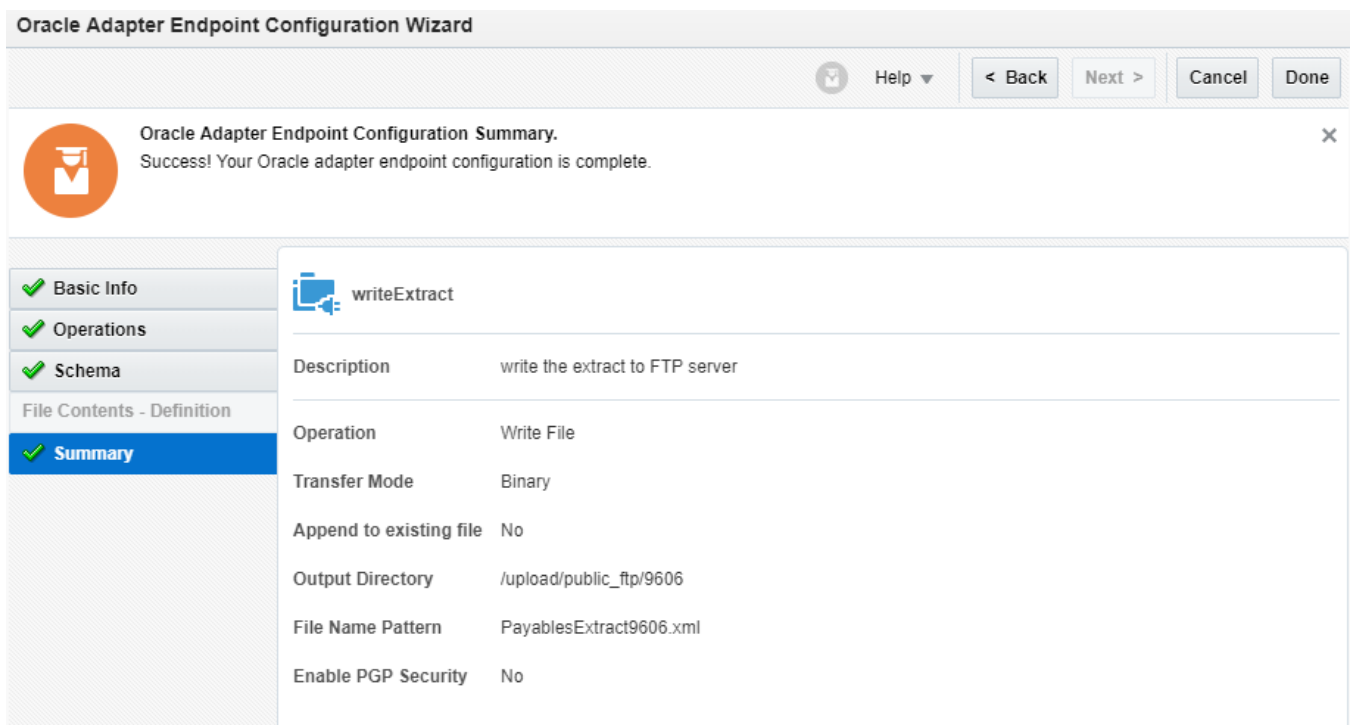


Click Next.

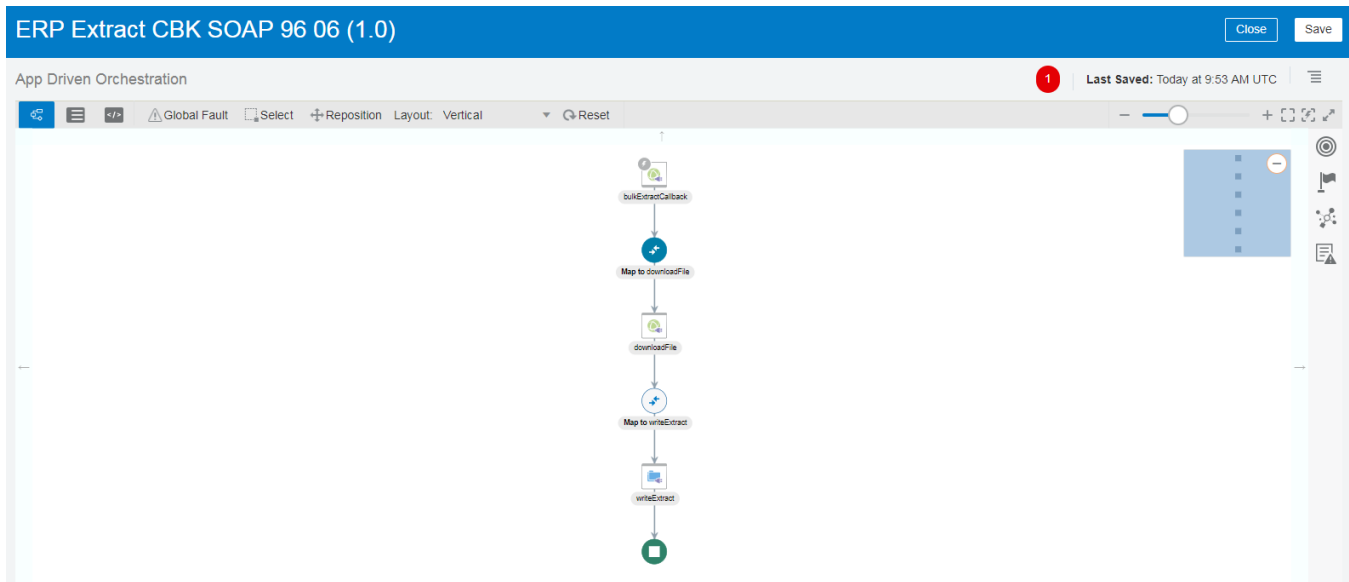
25. In the Schema page, select "No". For this lab, we will simply write the complete extract. Click Next



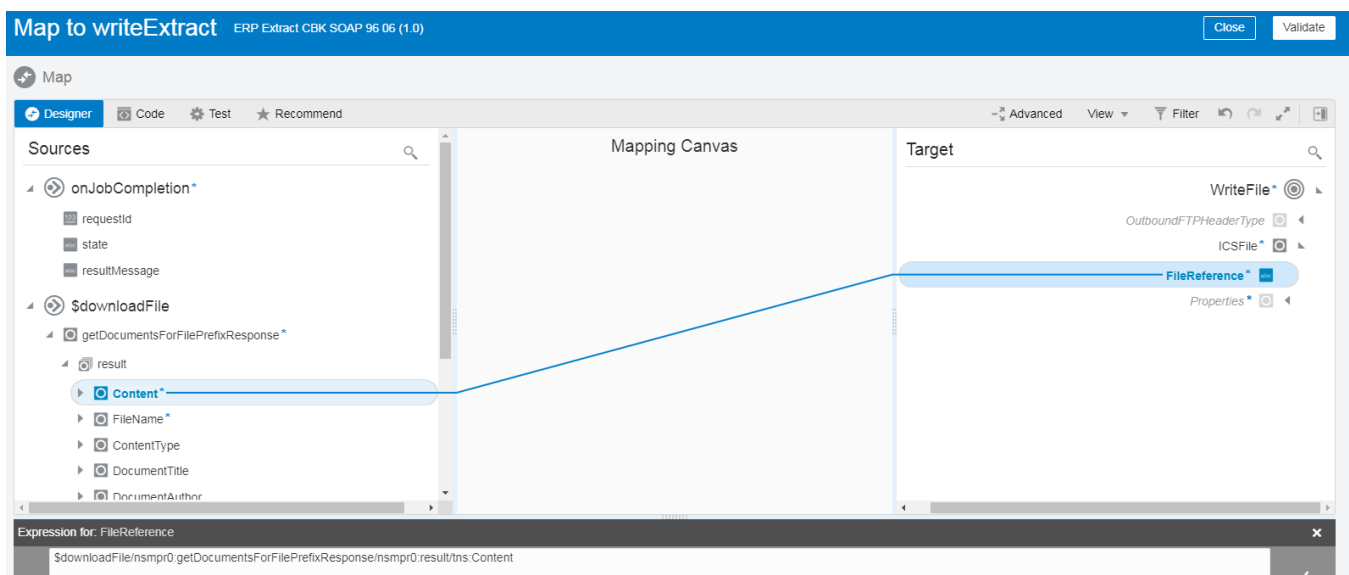
26. Review the configuration and Click on Done



27. Integration so far...

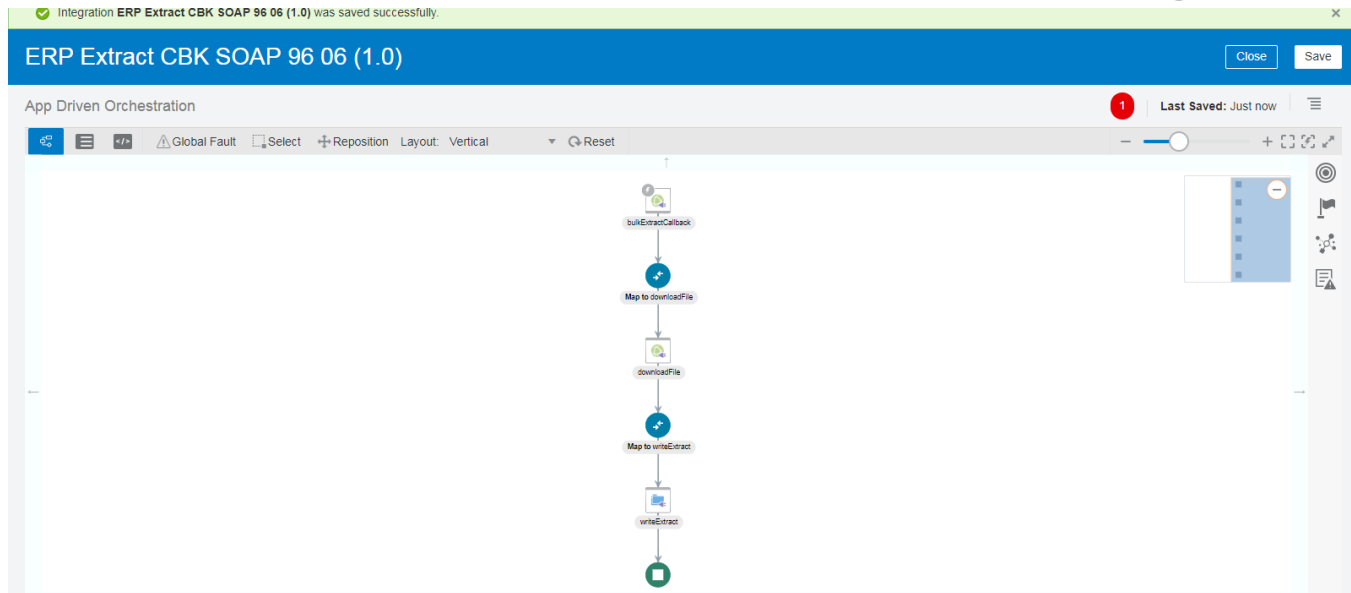


28. Edit the Map activity “Map to writeExtract”. The response of the getDocumentsForFilePrefix API call is an attachment. We will now write the attachment directly to FTP server. Perform the following mapping



Click on the Tick mark in the expression window. Validate and Close the Mapper. Save your integration flow

29. Now your Callback flow is complete.



30. Provide the Tracking information as per below and save.

Business Identifiers For Tracking

Business identifiers enable runtime tracking on messages. Specify up to three tracking fields. A primary identifier is required. It enables you to track fields across integration flows and is always available.




Additional business identifier fields are optional. At runtime, they are available for tracking only when this integration flow is selected.

Primary	Tracking Field	Tracking Name	Tracking Variable	Help Text
<input checked="" type="checkbox"/>	requestId	request Id 96 06	tracking_var_1	How to track it?
<input type="checkbox"/>	Drag a trigger field here	tracking_var_2	tracking_var_2	How to track it?
<input type="checkbox"/>	Drag a trigger field here	tracking_var_3	tracking_var_3	How to track it?

Source: Find... onJobCompletion
 <> requestId
 <> state
 <> resultMessage

Save Cancel

31. Save and Activate your integration. Copy the integration flow endpoint (without the “?wsdl”) from “how to run” icon
 Ex: https://<oic_host>/ic/ws/integration/v1/flows/soap/ERP_EXTRA_CBK_SOAP_96_06/1.0/

Version	Last Updated	Status
1.0.0	Sep 5, 2019 05:31:34 PM IST	
1.0.0		
1.0.0		

WSDL URL: https://OICTraining1-oicpm.integration.ocp.oraclecloud.com:443/ic/ws/integration/v1/flows/soap/ERP_EXTRACT_CBK_SOAP/1.0/?wsdl

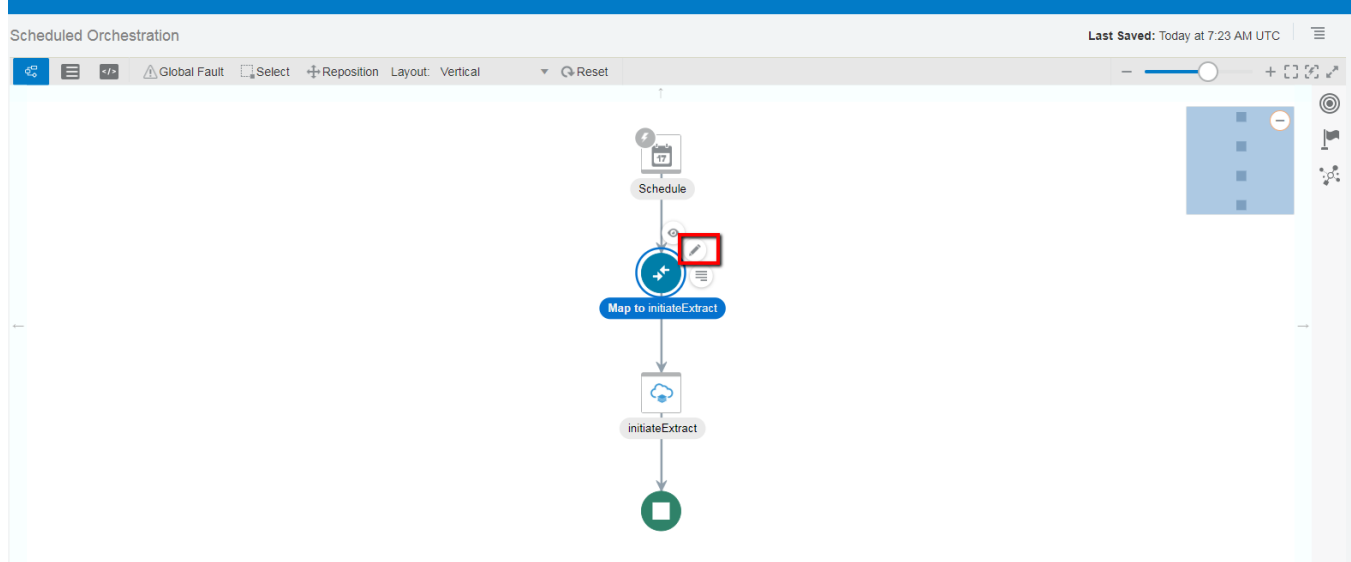
Endpoint URL: https://oictraining1-oicpm.integration.ocp.oraclecloud.com:443/ic/ws/integration/v1/flows/soap/ERP_EXTRACT_CBK_SOAP/1.0/

[How to run](#)
[Track Instances](#)

32. Edit the integration flow ERP Bulk Extract <ClassId> <StudentId>.

Select the “Map to initiate extract” activity and click on Edit.

ERP Bulk Extract 96 06 (1.0)



33. Select the “callbackURL” element from the Target. In the expression window provide the callback URL as string value

Map to initiateExtract ERP Bulk Extract 96 06 (1.0) Close Validate

Map

Sources

- schedule*
- startTime*
- \$tracking_var_1
- \$tracking_var_2
- \$tracking_var_3

Mapping Canvas

Target

exportBulkData*

- jobName
- parameterList
- jobOptions
- callbackURL
- notificationCode
- ConnectivityProperties

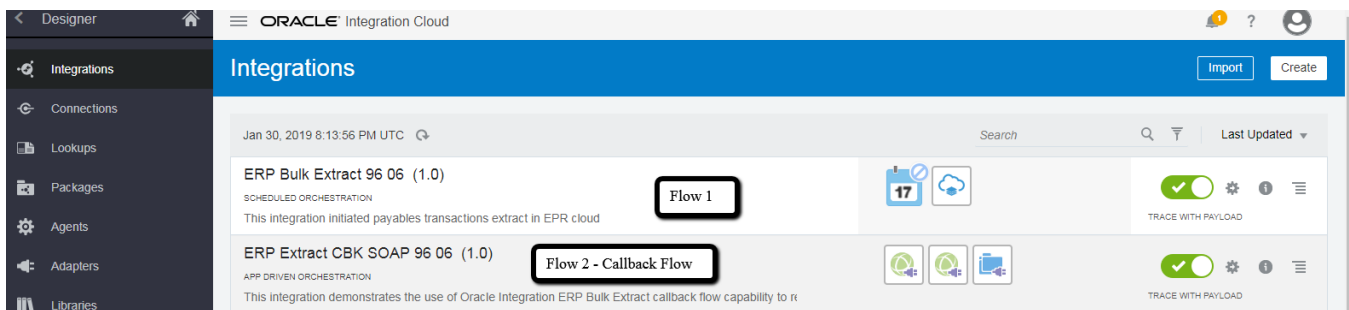
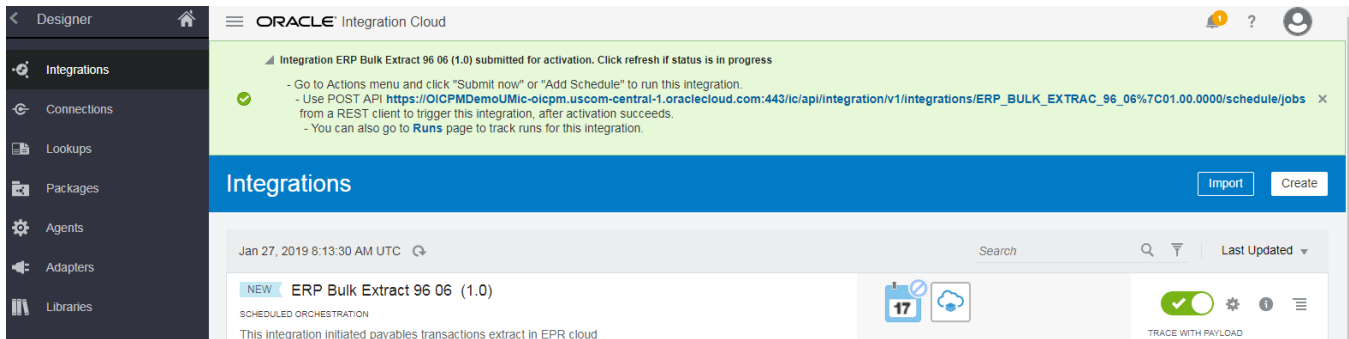
Text for: callbackURL

https://oicpmdemomouic-oicpm.us.com-central-1.oraclecloud.com/ic/ws/integration/v1/flows/soap/ERP_EXTRACT_CBK_SOAP_96_06/1.0/

Validate and Close the mapper. Save the integration flow

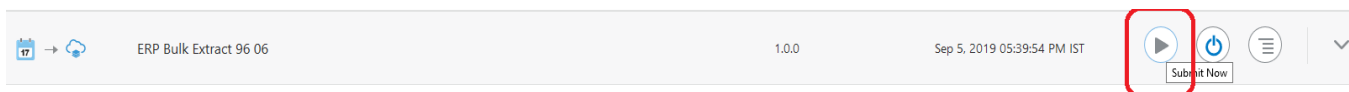
Activate the Bulk Extract Integration (Flow1)

1. Save and Activate the integration flow “ERP Bulk Extract <ClassId> <StudentId>”
2. Select Enable Tracing and Include Payload options and activate the integration flow.
3. The activation should complete in a few seconds typically and show a green ribbon at the top.

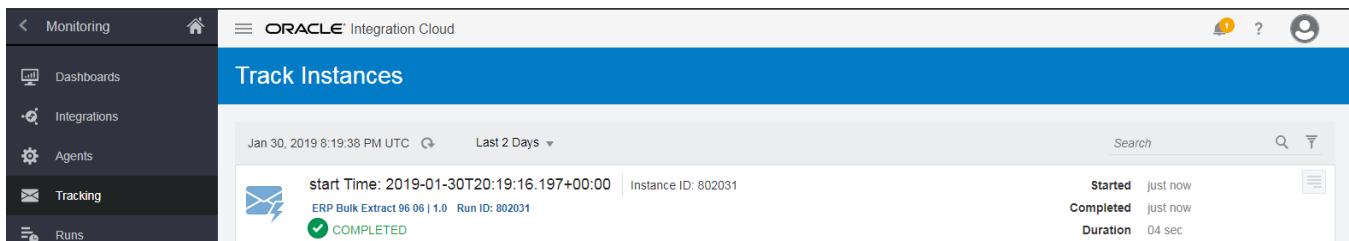


Testing the Bulk Extract end to end Flow

1. Click on “Submit Now” icon of the integration flow (ERP Bulk Extract <ClassId> <StudentId>) to initiate the Payables Transactions extract job.



Navigate to Monitoring -> Tracking page. You can see that a schedule job kicked off and initiated the extract



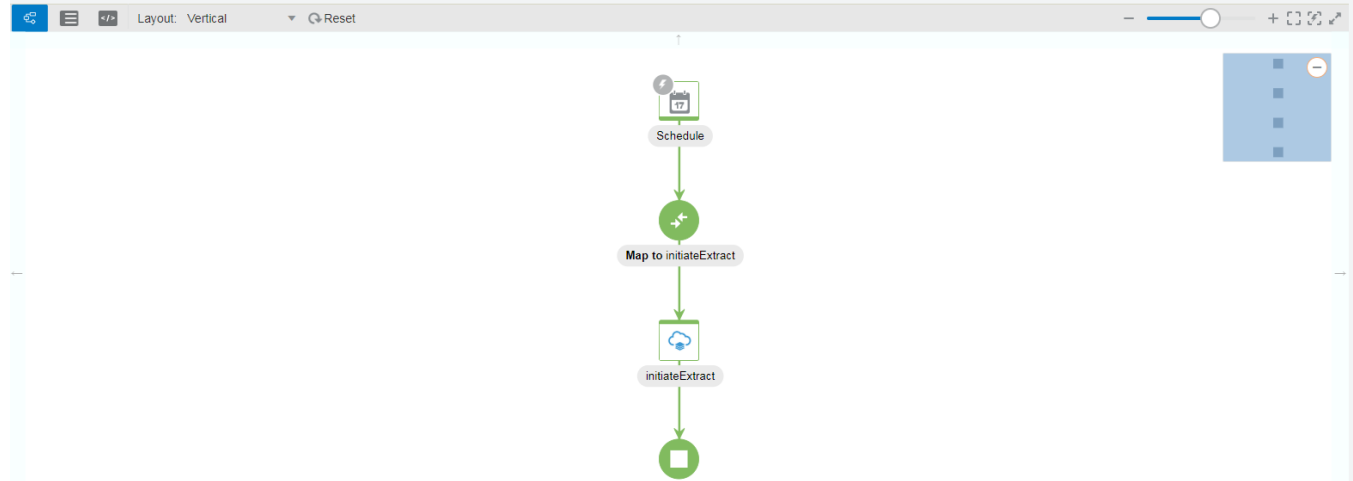
The green path indicates the flow is completed successfully.

start Time: 2019-01-30T20:19:16.197+00:00 | 802031

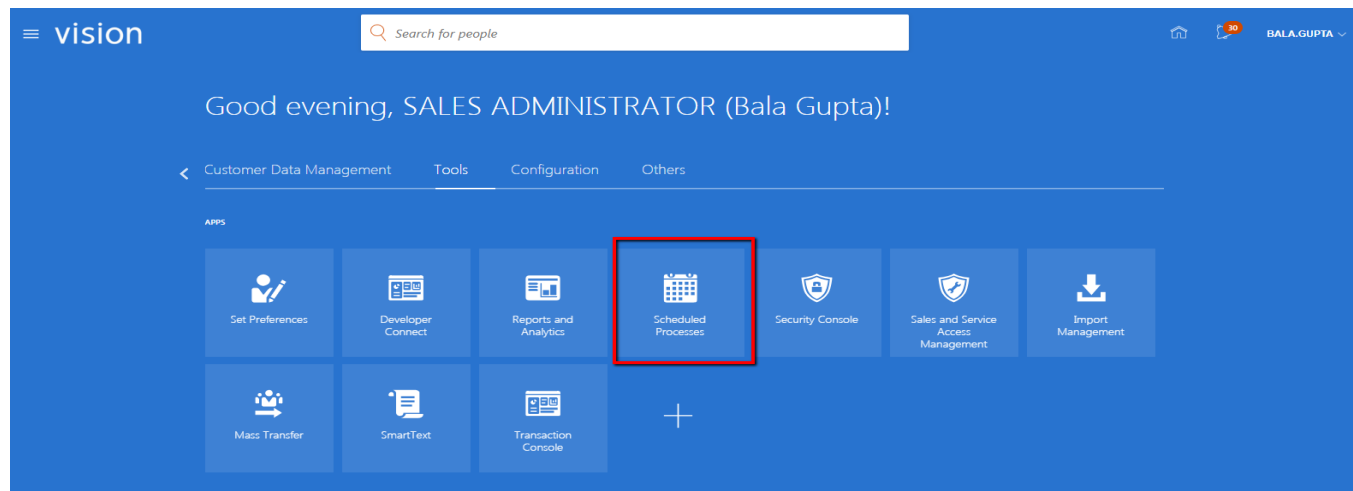
Close

Instance of "ERP Bulk Extract 96 06 (1.0)"

Completed: 1 minute ago



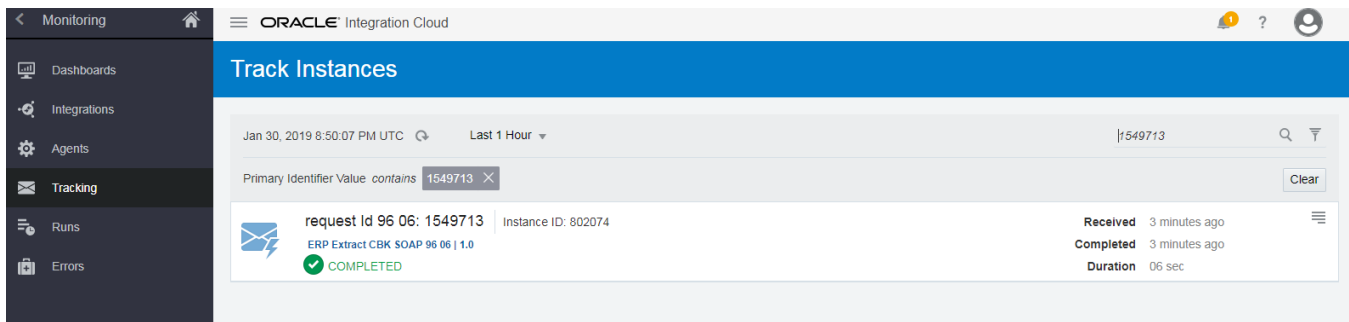
Login into ERP Cloud as bala.gupta and credentials provided. Navigate to home and Select the Tools tab and Click on "Scheduled Processes" card



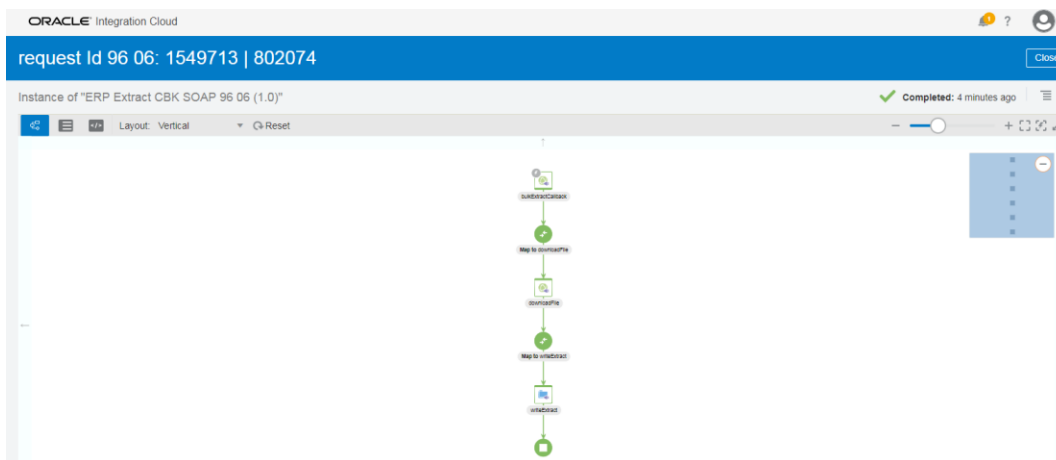
You can observe that Payables transactions job is completed successfully. Make a note of the process id.

vision				
Overview				
Search				
Search Results				
View: <input checked="" type="radio"/> Flat List <input type="radio"/> Hierarchy				
Actions: <input type="button" value="Schedule New Process"/> <input type="button" value="Resubmit"/> <input type="button" value="Put On Hold"/> <input type="button" value="Cancel Process"/> <input type="button" value="Release Process"/> <input type="button" value="View Log"/>				
Name	Process ID	Status	Scheduled Time	Submission Time
Payables Transactions Extract	1549714	Succeeded	1/30/19 8:45 PM UTC	1/30/19 8:45 PM UTC
Generate Data File for Export	1549713	Succeeded	1/30/19 8:45 PM UTC	1/30/19 8:45 PM UTC

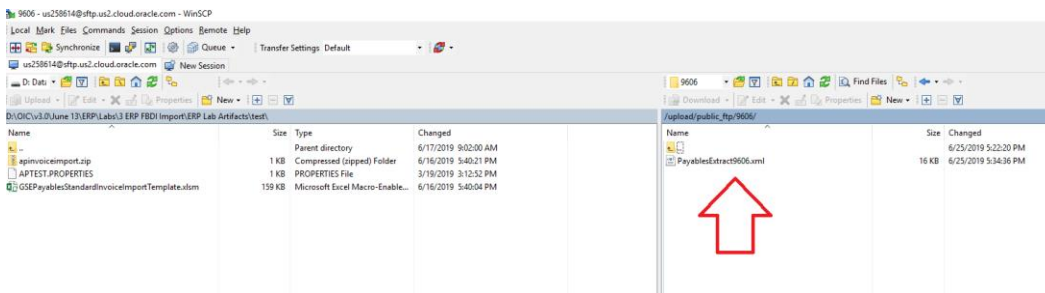
Go back to the Integration Cloud -> Monitoring page and search for the instance with the process id copied



Click on the instance and make sure the integration is completed indicating a “Green” path.



Login into the FTP server with the credentials provided. Verify the payables transactions extract file.



Download the extract file from the ftp server and verify.

```

<?xml version="1.0" encoding="UTF-8"?>
<!--Generated by Oracle BI Publisher -Dataengine, datamodel:_Financials_Payables_Invoices_Data_Models_PayablesTransactionsExtractDm_xdm -->
- <APXINRIR>
  <P_BUSINESS_UNIT>300000046987012</P_BUSINESS_UNIT>
  <P_CONC_REQUEST_ID/>
  <P_BATCH/>
  <P_ENTRY_PERSON/>
  <P_START_DATE/>
  <P_END_DATE/>
  <P_ACCOUNTING_PERIOD>12-18</P_ACCOUNTING_PERIOD>
  <P_CANCELLED_FLAG>N</P_CANCELLED_FLAG>
  <P_UNAPPROVE_FLAG>N</P_UNAPPROVE_FLAG>
  <P_SET_OF_BOOKS_ID>300000046975971</P_SET_OF_BOOKS_ID>
  <P_INVOICE_TYPE/>
  <P_VENDOR_ID/>
  <P_FLEXDATA/>
  <P_EXTRACT_MODE>FULL_EXTRACT</P_EXTRACT_MODE>
  <P_INCR_EXPORT_DATE/>
  <P_EXTRACT_DATE_FROM/>
  <P_EXTRACT_DATE_TO/>
  <P_EXTRACT_NAME>PayablesTransactionsExtract</P_EXTRACT_NAME>
  <P_PARENT_EXTRACT_NAME/>
- <LIST_G_CURRENCY>
  - <G_CURRENCY>
    <C_CURRENCY_CODE>USD</C_CURRENCY_CODE>
    <C_LIAB_ACCOUNTING_FLEX/>
    - <LIST_G_BATCH>
      - <G_BATCH>
        <C_BATCH_NAME/>
        <C_UPPER_BATCH_NAME/>
        - <LIST_G_VENDOR_BREAK>
          - <G_VENDOR_BREAK>
            <C_UPPER_VENDOR_NAME>ADVANCED CORP</C_UPPER_VENDOR_NAME>
            <C_SORT_VENDOR_NAME>ADVANCED CORP</C_SORT_VENDOR_NAME>
            - <LIST_G_VENDOR>
              - <G_VENDOR>
                <C_VENDOR_NAME>Advanced Corp</C_VENDOR_NAME>
                <C_INVOICE_NUM>AC-110119-1</C_INVOICE_NUM>
                <C_VENDOR>300000047507546</C_VENDOR>
                <C_INVOICE_AMOUNT>1095</C_INVOICE_AMOUNT>
                <C_INVOICE_DATE>2018-12-15</C_INVOICE_DATE>
                <C_AMOUNT_REM>1095</C_AMOUNT_REM>
                <C_DESCRIPTION/>
                <C_INVOICE_TYPE>STANDARD</C_INVOICE_TYPE>
                <C_NLS_INVOICE_TYPE>Standard</C_NLS_INVOICE_TYPE>
                <C_VOUCHER_NUM/>

```

Congratulations. You have completed an end-to-end flow of Initiating Bulk data extract and designed a callback flow to download the extract from UCM.